

WHAT IS CLAIMED IS:

1. A pink light-emitting device with high brightness comprising a light-emitting diode as a luminescent element and a fluorescent body comprising yttrium aluminum garnet fluorescent powders with formula of
5 $(Y_{3-x-y}Ce_xZ_y)Al_5O_{12}$ or $(Y_3Ce_xZ_y)Al_5O_{12}$, wherein said light-emitting element emits a purple to blue light with a wavelength ranging from 400 nm to 450 nm, $0 < x \leq 0.8$, $0.5 < y \leq 2.5$, and Z is selected from a group consisting of rare earth metals other than cerium (Ce).
2. A pink light-emitting device according to Claim 1, wherein
10 said rare earth metals other than cerium comprises gadolinium (Gd), praseodymium (Pr), neodymium (Nd), promethium (Pm), samarium (Sm), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), or lutetium (Lu).
3. A pink light-emitting device according to Claim 1, wherein Z
15 is gadolinium.
4. A pink light-emitting device according to Claim 1, wherein said fluorescent powder is excited by a purple to blue light to emit an orange-yellow to orange light with a wavelength ranging from 575 nm to 585 nm.
- 20 5. A pink light-emitting device according to Claim 1, said yttrium aluminum garnet fluorescent powder is prepared by a process comprising the steps of (1) grinding and homogeneously mixing water soluble compounds containing desired metals in desired ratios as those of the metals in the fluorescent powder to provide a metal powder mixture, (2)
25 dissolving the powder mixture in water to form an aqueous solution, (3) adjusting the pH value of the aqueous solution to equal to or greater than 3, and converting the aqueous solution into a gel thereby, (4) pyrolyzing the gel to an ash, (5) calcining the ash, and (6) sintering the calcined ash to form the fluorescent powder.